Safe Yield Discussion – components of safe yield that were presented on September 14, 2010

"Safe yield"- the maximum dependable withdrawals that can be made continuously from a water source including ground or surface water during a period of years in which the probable driest period or period of greatest water deficiency is likely to occur; provided, however, that such dependability is relative and is a function of storage and drought probability.

1. Basin Yield
    a. Basin Yield 1: Annualized Basin Yield, Monthly Q90
    b. Basin Yield 2: Annualized Basin Yield, Monthly from minimum year

2. Environmental Protection Factor (EPF)
    a. EPF 1: August median flow for period of record
    b. EPF 2: 75% of August median flow for period of record

3. Storage Volume
    a. Reservoirs that can store more than 1 year of flow

4. Safe Yield Options *NOTE: if total allocations used, not net allocation*
    a. Safe Yield A: Basin Yield 1 – EPF 1 + storage (3 major basins fail)
    b. Safe Yield B: Basin Yield 1 – EPF 2 + storage (1 major basin fails)
    c. Safe Yield C: Basin Yield 2 – EPF 1 + storage (1 major basin fails)
    d. Safe Yield D: Basin Yield 2 – EPF 2 + storage (1 major basin fails)

5. Determining Compliance with Safe Yield (SY)
    a. Compare SY to Total Allocated
    b. Compare SY to Net Total Allocated (total allocated minus in-basin returns)
    c. Compare SY to Current Use
    d. Compare SY to Net Current Use (current use minus in-basin returns)
    e. Groundwater and surface sources may be treated differently

6. Protection beyond Safe Yield
    a. Safe Yield alone won't always protect all flows b/c it's "the bucket", so we need Categories, Criteria and Allocation to provide the additional protection

7. Safe Yield Methodology
    a. One methodology applied across all basins
    b. More than one methodology applied (different methodologies on different basins)
    c. Examples have included:
        i. Issue permits with enforcement compliance schedules to meet safe yield registrations alone exceed safe yield
        ii. Different methodologies for calculating safe yield for different basins or classes
        iii. Reduce safe yield over time (i.e. increase EPF over time)
        iv. Recognize that reservoir withdrawal in non-summer seasons

This summary is offered for discussion purposes only and does not necessarily represent current statute, regulation, or policy positions of the Commonwealth of Massachusetts unless specifically acknowledged. This summary is not to be cited as a reference. Its purpose is to foster open and broad discussion of the issues of sustainable water management as well as help assure public awareness of the discussions.

v. Specify in safe yield language that strict permit conditions are required when certain goals are not met